

# HIGH THROUGHPUT ARCHITECTURE FOR SEMICONDUCTOR PROCESSING

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## ABSTRACT OF THE DISCLOSURE

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In one embodiment, a wafer processing system has a loading station, a process module, and a load lock directly adjacent to the process module. The load lock has a small volume and can include integrated heating/cooling units. The load lock also has a wafer transfer mechanism for placing a wafer directly to the process module. The wafer processing system does not employ a transfer chamber to transport wafers between the load lock and the process module. Instead, a wafer is directly transferred from the load lock to the process module using the wafer transfer mechanism. Not requiring a transfer chamber not only improves the throughput of the wafer processing system, but also lowers its complexity and component count as well. The throughput of the wafer processing system is also improved by using a small volume load lock with integrated cooling/heating units.